

DT04 Rec'd PCT/PTO 0 7 JUL 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A system (4) for applying opening devices (2) onto packages (3) of pourable food products, said system comprising a package conveyor (6) for feeding said packages along a predetermined path (P) and an application apparatus (13) for applying said opening devices onto said packages on said package conveyor, characterised ~~in that~~ wherein said application apparatus comprises an optical detection unit (30) for detecting an application point on one of said packages (20) on said package conveyor and a pick and place unit (36) for receiving application information regarding said detected application point from said optical detection unit, picking one of said opening devices and placing it onto said one of said packages on said package conveyor by means of said application information.

2. (Currently Amended) A system (4) as claimed in claim 1, ~~characterised in that~~ wherein said application point is defined by a prelaminated hole (24) on said one of said packages (20).

3. (Currently Amended) A system (4) as claimed in ~~claims 1 or 2,~~ ~~characterised in that~~ claim 1, wherein said optical detection unit (30) comprises a camera (32) for recording an image of said one of said packages (20), wherein said image contains said application point.

4. (Currently Amended) A system (4) as claimed in claim 3, ~~characterised in that~~ wherein said optical detection unit (30) further comprises processing means (34) for producing said application information means (34) for producing said application information by comparing said image with a reference image containing a reference system, and obtaining a location of said application point with respect to said reference system.

5. (Currently Amended) A system (4) as claimed in claim 4, ~~characterised in that~~ wherein said reference system includes an ideal location of the application point (23) corresponding to the application point on a perfect package.

6. (Currently Amended) A system (4) as claimed in claim 4, ~~characterised in that~~ wherein said reference system includes an ideal location of the application point (23) in relation to a mark (29) being fixed with respect to said package conveyor (6), said ideal location corresponding to the application point on a perfect package.

7. (Currently Amended) A system (4) as in ~~any one of the foregoing claims,~~ ~~characterised in that~~ claim 1, wherein said application information contains a movement pattern for said pick and place unit (36) for placing said one of said opening devices onto said one of said packages (20).

8. (Currently Amended) A system (4) as claimed in ~~any one of the foregoing claims,~~ ~~characterised in that~~ claim 1, wherein said optical detection unit (30) is arranged integral with said pick and place unit (36).

9. (Currently Amended) A system (4) as claimed in ~~any one of claims 1-7,~~ ~~characterised in that~~ claim 1, wherein said optical detection unit (30) is arranged adjacent to said package conveyor (6) at a distance from said pick and place unit (36).

10. (Currently Amended) A system (1) as claimed in ~~any one of the foregoing claims,~~
~~characterised in that~~ claim 1, wherein said pick and place unit (36) comprises at least one
robot (38) with at least one robot arm (39a-e).

11. (Currently Amended) A system (1) as claimed in ~~any one of claims 1-9,~~
~~characterised in that~~ claim 1, wherein said pick and place unit (36) comprises at least one
robot (38) with three robot arms (39a-e), said at least one robot being able to operate in
three dimensions.

12. (Currently Amended) A system (1) as claimed in ~~any one of the foregoing claims,~~
~~characterised in that~~ claim 1, wherein said application apparatus (43) further comprises a
gluing unit (45) for applying glue onto said opening devices (2) before picking.

13. (Currently Amended) A system (1) as claimed in ~~any one of the foregoing claims,~~
~~characterised in that~~ claim 1, wherein it further comprises a supply station (42) for feeding
said packages (3) to said package conveyor (6).

14. (Currently Amended) A system (1) as claimed in ~~any one of the foregoing claims,~~
~~characterised in that~~ claim 1, wherein it further comprises a package support rail (49) for
supporting said packages (3) during the application of said opening devices (2) by securing
said packages between said support rail and said package conveyor (6).

15. (Currently Amended) A system (1) as claimed in claim 14, ~~characterised in that~~
wherein said package support rail (49) is adjustable to permit application of opening devices
(2) onto packages (3) of various sizes.

16. (Currently Amended) A system (1) as claimed in ~~any one of the foregoing claims,~~
~~characterised in that~~ claim 1, wherein it further comprises a number of separated guiding
devices (9) for guiding said packages (3), said guiding devices being fixed to and movable
with said package conveyor (6) so as to feed said packages along said predetermined path
(P).

17. (Currently Amended) A system (1) as claimed in claim 16, ~~characterised in that~~
~~wherein~~ said guiding devices (9) each comprises at least one carrier finger (10) for
supporting and conveying said packages (3).

18. (Currently Amended) A system (1) as claimed in ~~any one of the foregoing claims,~~
~~characterised in that~~ claim 1, wherein it further comprises a feeding apparatus (17) for
feeding said opening devices (2) to said application apparatus (13).

19. (Currently Amended) A system (1) as claimed in claim 12, ~~characterised in that~~
~~wherein~~ it further comprises a feeding apparatus (17) for feeding said opening (2) devices to
said gluing unit (15), whereupon said opening devices are being picked by said pick and
place unit (36).

20. (Currently Amended) A method for applying opening devices (2) onto packages
(3) of pourable food products, comprising the steps of feeding said packages along a
predetermined path (P) by a package conveyor (6) and applying said opening devices onto
said packages on said package conveyor, ~~characterized in that~~ wherein it further comprises
the steps of optically detecting an application point on one of said packages (20) on said
package conveyor; producing, from said optically detected application point, application
information for controlling a pick and place unit (36); and picking one of said opening devices

and placing it onto said one of said packages on said package conveyor by means of said pick and place unit and in accordance with said application information.

21. (Currently Amended) A method as claimed in claim 20, ~~characterised in that~~ wherein said application point is defined by a prelaminated hole (21) on said one of said packages (20).

22. (Currently Amended) A method as claimed in claim 20 ~~or 21, characterised in that~~ wherein it further comprises the step of recording an image of said one of said packages (20), wherein said image contains said application point.

23. (Currently Amended) A method as claimed in claim 22, ~~characterised in that~~ wherein said application information is produced comparing said image with a reference image containing a reference system, and obtaining a location of said application point with respect to said reference system.

24. (Currently Amended) A method as claimed in claim 23, ~~characterised in that~~ wherein said reference system includes an ideal location of the application point (23) corresponding to the application point on a perfect package.

25. (Currently Amended) A method as claimed in claim 23, ~~characterised in that~~ wherein said reference system includes an ideal location of the application point (23) in relation to a mark (29) being fixed with respect to said package conveyor (6), said ideal location corresponding to the application point on a perfect package.

26. (Currently Amended) A method as claimed in ~~any one of claims 20-25,~~ claim 20, wherein said application information contains a movement

pattern for said pick and place unit ~~(36)~~ for placing said one of said opening devices onto said one of said packages ~~(20)~~.

27. (Currently Amended) A method as claimed in ~~any one of claims 20-26,~~
~~characterised in that~~ claim 20, wherein it further comprises the step of applying glue to said opening devices ~~(2)~~ before picking.

28. (Currently Amended) A method as claimed in ~~any one of claims 20-27,~~
~~characterised in that~~ claim 20, wherein it further comprises the step of feeding said packages ~~(3)~~ to said package conveyor ~~(6)~~.